

# Building Queensland's Renewable Biomanufacturing Sector

**From pilot plant to policy: how translational research shaped Queensland's biofutures strategy and supported global investment**

**Queensland's emergence as a national leader in industrial biotechnology and renewable biomanufacturing has its roots in QUT-led research focused on the development, demonstration, and economic viability of biotechnologies.**

Led by Professor Ian O'Hara and researchers from the Centre for Agriculture and the Bioeconomy, and supported by the QUT-owned Mackay Renewable Biocommodities Pilot Plant, this work created a vital testbed for moving innovations from the laboratory to commercial-scale application.

The research outcomes informed the Queensland Government's strategic vision, shaping the development of the 10-Year Biofutures Roadmap and Action Plan which positioned the Biofutures sector as a state economic priority.

QUT's foundational role and research credibility led to Professor O'Hara's appointment as Queensland's Biofutures Industry Envoy, strengthening the connection between government, industry, and academia. These efforts fostered an environment conducive to commercial partnerships and international investment. As a result, global companies successfully piloted sustainable fuel technologies using Queensland's sugarcane waste, with large-scale projects and feasibility studies for sustainable aviation fuel plants following.

Memorandums of Understanding with international defence organisations and biofuel trials across aviation, marine, and public transport sectors further demonstrate the reach of this work.



## Impact highlights

- QUT's partnership with Mackay Sugar Ltd led to the creation of the Mackay Renewable Biocommodities Pilot Plant, attracting \$17M in industry funding and generating 35 patent applications.
- Research led by Professor Ian O'Hara, with key contributions from Professor Zhanying Zhang, Professor Mark Harrison, Associate Professor Darryn Rackemann and Dr Laleh Moghaddam at QUT's Centre for Agriculture and the Bioeconomy.



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